



11/04/11

Technical Report for

KRW Consulting, Inc.

XOM PCU 297-12A

1105-16A

Accutest Job Number: D28995

Sampling Date: 10/28/11

Report to:

KRW Consulting, Inc.
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ATTN: Dwayne Knudson

Total number of pages in report: 49



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian
Laboratory Director

Client Service contact: 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

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Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D28995

XOM PCU 297-12A
Project No: 1105-16A

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
D28995-1	10/28/11	11:35 CH	10/29/11	SO	Soil	NORTH SPOILS

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D28995

Site: XOM PCU 297-12A

Report Date 11/4/2011 3:57:14 PM

On 10/29/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 0.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D28995 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO	Batch ID: V3V825
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28995-1MS, D28995-1MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB774
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D28995-1MS, D28995-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP4765
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29012-2MS, D29012-2MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO	Batch ID: GN12261
------------------	--------------------------

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	NORTH SPOILS	Date Sampled:	10/28/11
Lab Sample ID:	D28995-1	Date Received:	10/29/11
Matrix:	SO - Soil	Percent Solids:	87.3
Method:	SW846 8260B		
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V14381.D	1	11/01/11	DC	n/a	n/a	V3V825
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	65	28	ug/kg	
108-88-3	Toluene	ND	130	65	ug/kg	
100-41-4	Ethylbenzene	ND	130	32	ug/kg	
1330-20-7	Xylene (total)	ND	260	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	99%		61-130%
460-00-4	4-Bromofluorobenzene	103%		53-131%
17060-07-0	1,2-Dichloroethane-D4	96%		62-130%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	NORTH SPOILS	Date Sampled:	10/28/11
Lab Sample ID:	D28995-1	Date Received:	10/29/11
Matrix:	SO - Soil	Percent Solids:	87.3
Method:	SW846 8015B		
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13662.D	1	10/31/11	SK	n/a	n/a	GGB774
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

3.1

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Client Sample ID:	NORTH SPOILS	Date Sampled:	10/28/11
Lab Sample ID:	D28995-1	Date Received:	10/29/11
Matrix:	SO - Soil	Percent Solids:	87.3
Method:	SW846-8015B SW846 3546		
Project:	XOM PCU 297-12A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD11220.D	1	11/01/11	TR	11/01/11	OP4765	GFD559
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	15	9.9	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	109%		61-142%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D28995

Client: KRW CONSULTING, INC

Immediate Client Services Action Required: No

Date / Time Received: 10/29/2011 8:55:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: PCU 297-12A

Airbill #'s: FedEx

<u>Cooler Security</u>	<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	
3. Samples preserved property:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

4.1
4

GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V825-MB	3V14379.D	1	11/01/11	DC	n/a	n/a	V3V825

The QC reported here applies to the following samples:

Method: SW846 8260B

D28995-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
2037-26-5	Toluene-D8	99%	61-130%
460-00-4	4-Bromofluorobenzene	100%	53-131%
17060-07-0	1,2-Dichloroethane-D4	89%	62-130%

Blank Spike Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V825-BS	3V14380.D	1	11/01/11	DC	n/a	n/a	V3V825

The QC reported here applies to the following samples:

Method: SW846 8260B

D28995-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	50.9	102	70-130
100-41-4	Ethylbenzene	50	48.4	97	70-130
108-88-3	Toluene	50	46.6	93	70-130
1330-20-7	Xylene (total)	150	147	98	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	97%	61-130%
460-00-4	4-Bromofluorobenzene	102%	53-131%
17060-07-0	1,2-Dichloroethane-D4	97%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28995-1MS	3V14382.D	1	11/01/11	DC	n/a	n/a	V3V825
D28995-1MSD	3V14383.D	1	11/02/11	DC	n/a	n/a	V3V825
D28995-1	3V14381.D	1	11/01/11	DC	n/a	n/a	V3V825

The QC reported here applies to the following samples:

Method: SW846 8260B

D28995-1

CAS No.	Compound	D28995-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	3230	3410	106	3490	108	2	70-134/30
100-41-4	Ethylbenzene	ND	3230	3350	104	3330	103	1	70-137/30
108-88-3	Toluene	ND	3230	3190	99	3160	98	1	70-130/30
1330-20-7	Xylene (total)	ND	9680	10000	103	9950	103	1	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D28995-1	Limits
2037-26-5	Toluene-D8	99%	98%	99%	61-130%
460-00-4	4-Bromofluorobenzene	103%	106%	103%	53-131%
17060-07-0	1,2-Dichloroethane-D4	98%	98%	96%	62-130%

5.3.1
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GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3110111.S\
Data File : 3V14381.D
Acq On : 1 Nov 2011 11:20 pm
Operator : DONC
Sample : D28995-1, 50x
Misc : MS2894,V3V825,5.002,,100,5,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Nov 03 12:58:51 2011
Quant Method : C:\msdchem\1\METHODS\V3AP816TVH816.M
Quant Title : 8260
QLast Update : Tue Oct 25 11:42:01 2011
Response via : Initial Calibration

Table with 7 columns: Internal Standards, R.T., QIon, Response, Conc, Units, Dev(Min). Rows include Pentafluorobenzene, 1,4-Difluorobenzene, Chlorobenzene-d5, and 1,4-Dichlorobenzene-d4.

System Monitoring Compounds table with 7 columns. Rows include 1,2-Dichloroethane-d4 and Toluene-d8 with Spiked Amount, Range, and Recovery data.

Target Compounds table with 7 columns. Rows include TVH-Gasoline, Toluene, and Naphthalene with R.T., TIC, and Qvalue.

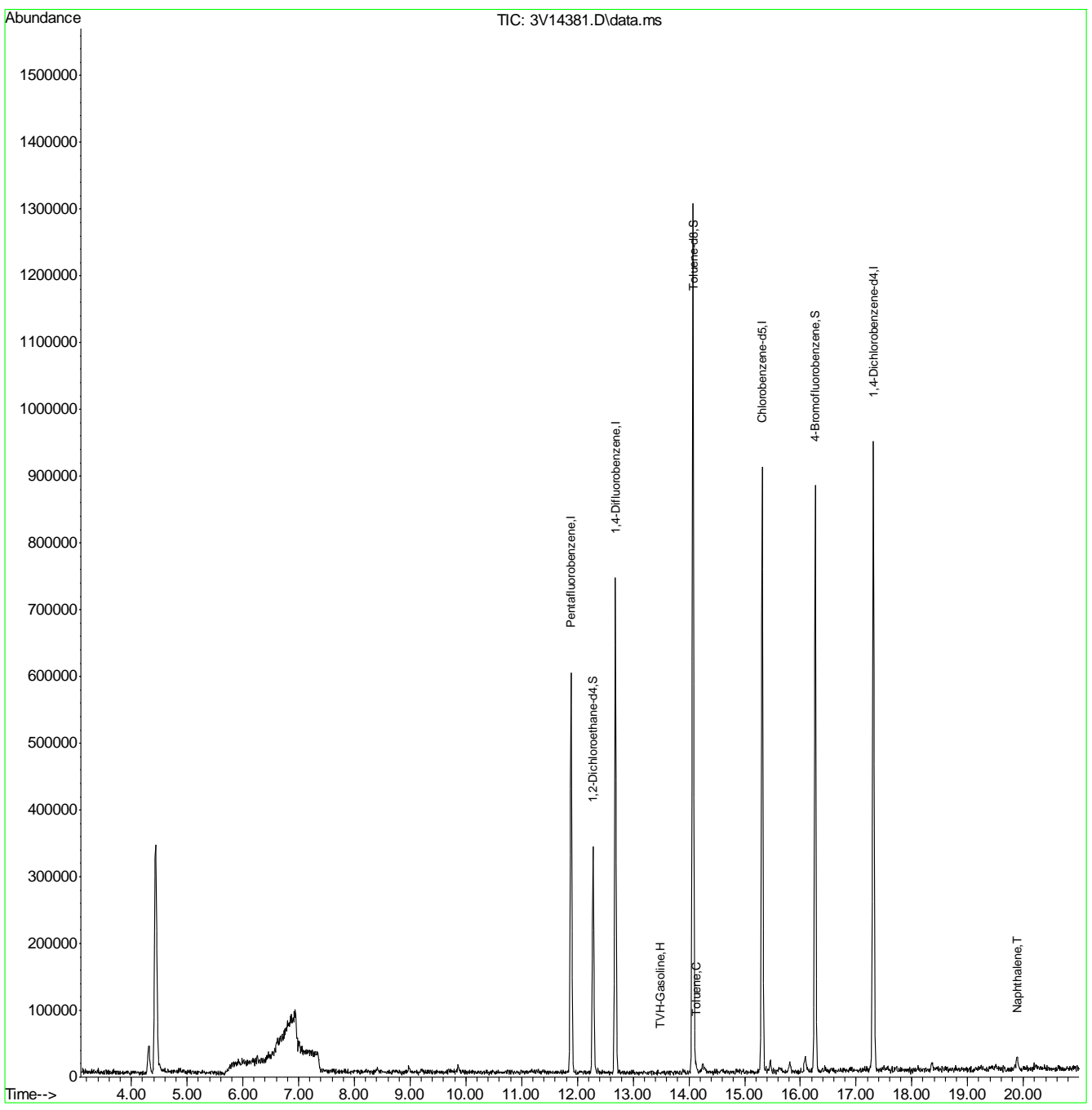
(#) = qualifier out of range (m) = manual integration (+) = signals summed

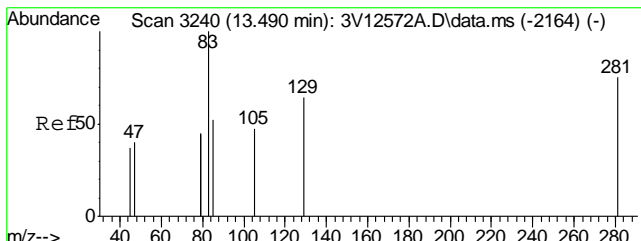
6.1.1
9

Quantitation Report (QT Reviewed)

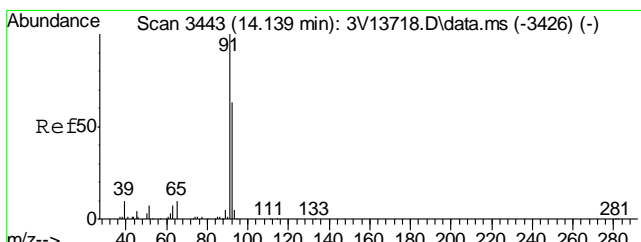
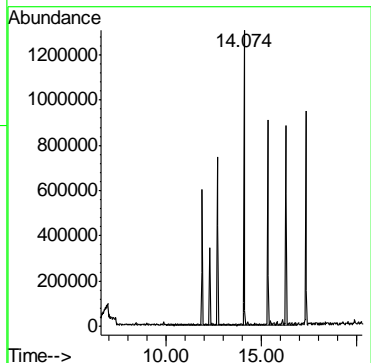
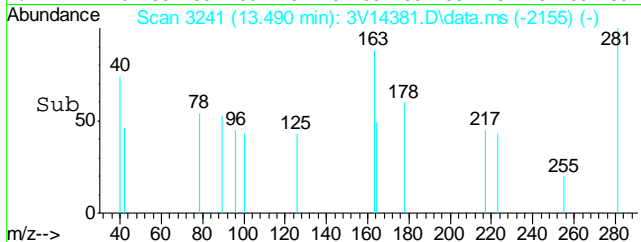
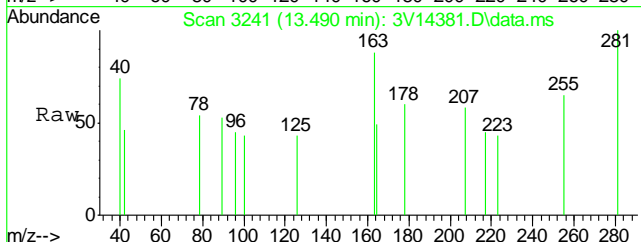
Data Path : C:\msdchem\1\DATA\V3110111.S\
Data File : 3V14381.D
Acq On : 1 Nov 2011 11:20 pm
Operator : DONC
Sample : D28995-1, 50x
Misc : MS2894,V3V825,5.002,,100,5,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Nov 03 12:58:51 2011
Quant Method : C:\msdchem\1\METHODS\V3AP816TVH816.M
Quant Title : 8260
QLast Update : Tue Oct 25 11:42:01 2011
Response via : Initial Calibration

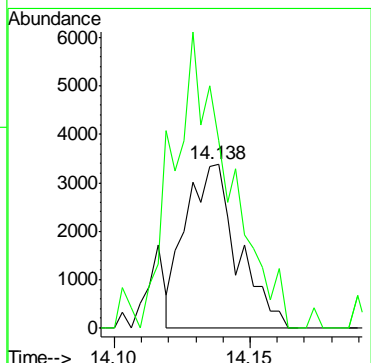
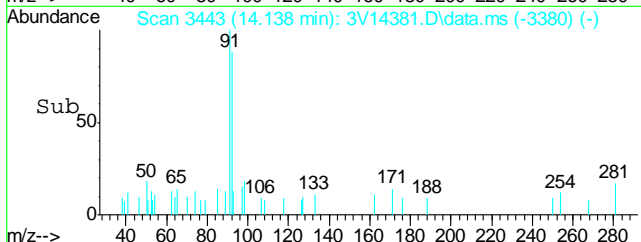
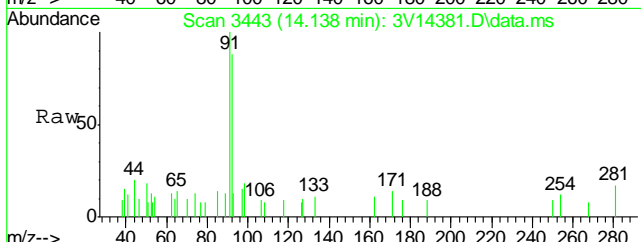


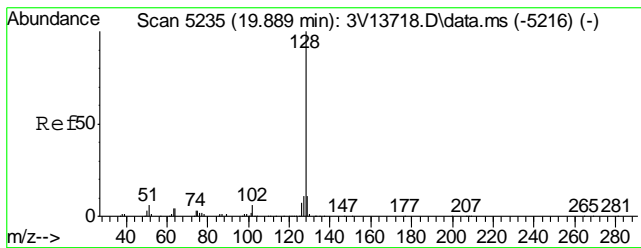


#1
 TVH-Gasoline
 Concen: 26.53 ug/l m
 RT: 13.491 min Scan# 3241
 Delta R.T. 0.000 min
 Lab File: 3V14381.D
 Acq: 1 Nov 2011 11:20 pm
 Tgt Ion:TIC Resp: 286116

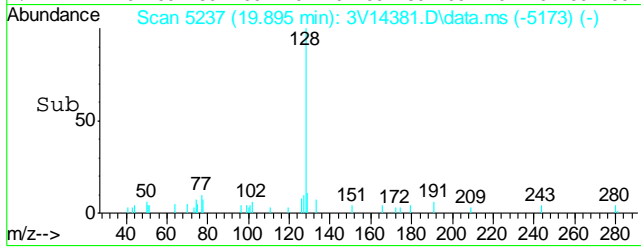
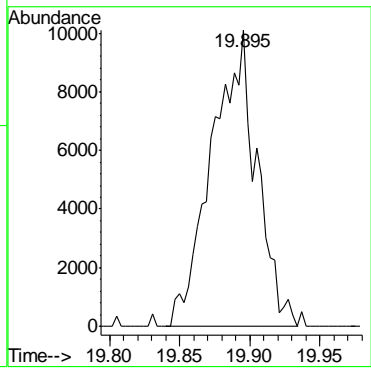
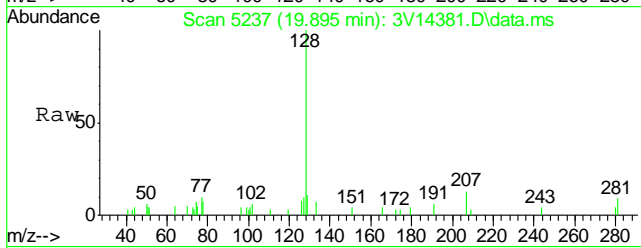


#62
 Toluene
 Concen: 0.37 ug/l
 RT: 14.138 min Scan# 3443
 Delta R.T. 0.001 min
 Lab File: 3V14381.D
 Acq: 1 Nov 2011 11:20 pm
 Tgt Ion: 92 Resp: 4518
 Ion Ratio Lower Upper
 92 100
 91 192.0 153.3 193.3





#91
 Naphthalene
 Concen: 1.35 ug/l
 RT: 19.895 min Scan# 5237
 Delta R.T. 0.004 min
 Lab File: 3V14381.D
 Acq: 1 Nov 2011 11:20 pm
 Tgt Ion:128 Resp: 22148



6.1.1
 6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3110111.S\
 Data File : 3V14379.D
 Acq On : 1 Nov 2011 10:18 pm
 Operator : DONC
 Sample : MB
 Misc : MS2894,V3V825,5,,100,5,1
 ALS Vial : 27 Sample Multiplier: 1

Quant Time: Nov 03 12:56:42 2011
 Quant Method : C:\msdchem\1\METHODS\V3AP816TVH816.M
 Quant Title : 8260
 QLast Update : Tue Oct 25 11:42:01 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.889	168	388162	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.685	114	640580	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.316	117	536655	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.308	152	272248	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.280	102	47158	44.36	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	88.72%
61) Toluene-d8	14.074	98	834495	49.72	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	99.44%
69) 4-Bromofluorobenzene	16.262	95	269102	49.78	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	99.56%

Target Compounds

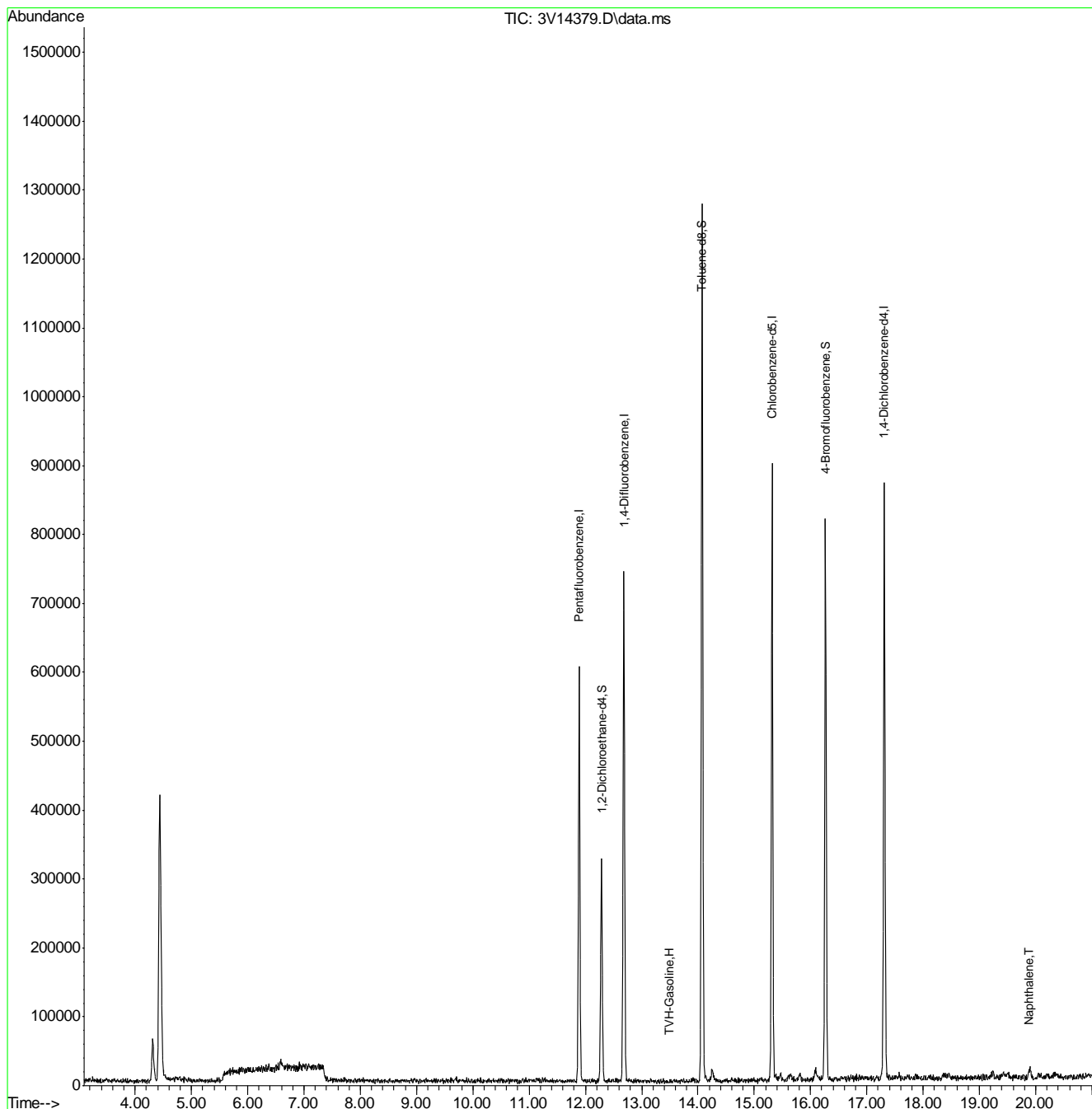
	R.T.	QIon	Response	Conc	Units	Qvalue
1) TVH-Gasoline	13.491	TIC	185572m	22.74	ug/l	
91) Naphthalene	19.879	128	17600	1.16	ug/l	100

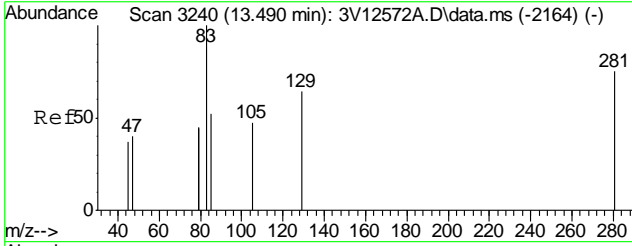
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

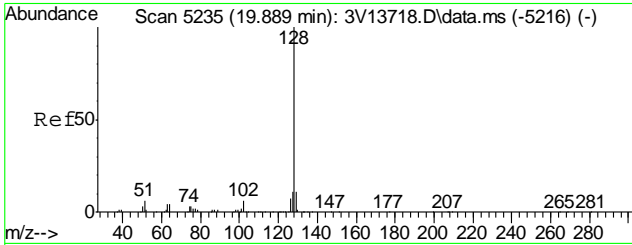
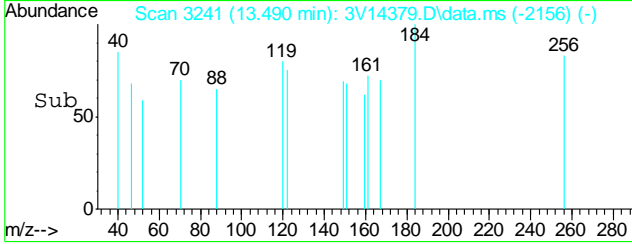
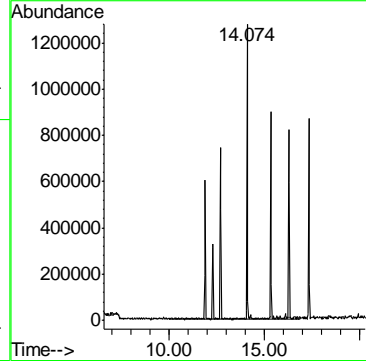
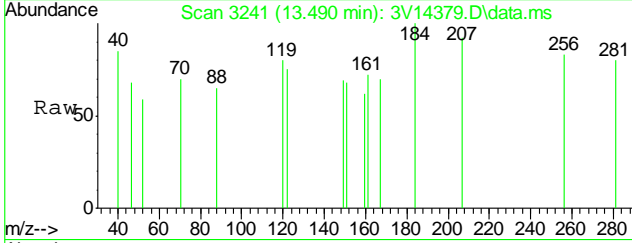
Data Path : C:\msdchem\1\DATA\V3110111.S\
 Data File : 3V14379.D
 Acq On : 1 Nov 2011 10:18 pm
 Operator : DONC
 Sample : MB
 Misc : MS2894,V3V825,5,,100,5,1
 ALS Vial : 27 Sample Multiplier: 1

Quant Time: Nov 03 12:56:42 2011
 Quant Method : C:\msdchem\1\METHODS\V3AP816TVH816.M
 Quant Title : 8260
 QLast Update : Tue Oct 25 11:42:01 2011
 Response via : Initial Calibration

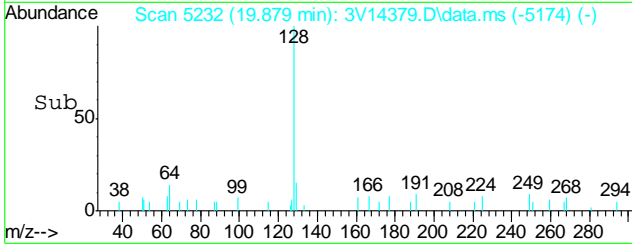
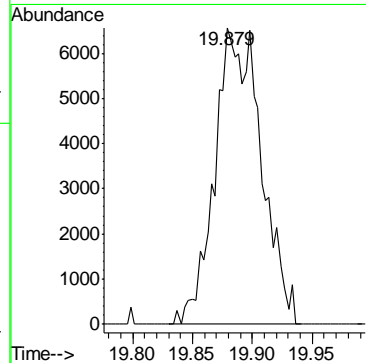
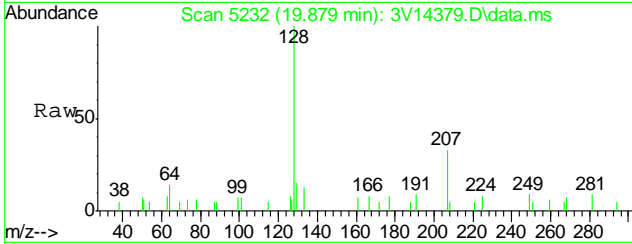




#1
TVH-Gasoline
Concen: 22.74 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V14379.D
Acq: 1 Nov 2011 10:18 pm
Tgt Ion:TIC Resp: 185572



#91
Naphthalene
Concen: 1.16 ug/l
RT: 19.879 min Scan# 5232
Delta R.T. -0.012 min
Lab File: 3V14379.D
Acq: 1 Nov 2011 10:18 pm
Tgt Ion:128 Resp: 17600



GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB774-MB	GB13660.D	1	10/31/11	SK	n/a	n/a	GGB774

The QC reported here applies to the following samples:

Method: SW846 8015B

D28995-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	86% 60-140%

Blank Spike Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB774-BS	GB13661.D	1	10/31/11	SK	n/a	n/a	GGB774

The QC reported here applies to the following samples:

Method: SW846 8015B

D28995-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	121	110	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	98%	60-140%

7.2.1

7

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D28995-1MS	GB13663.D	1	10/31/11	SK	n/a	n/a	GGB774
D28995-1MSD	GB13664.D	1	10/31/11	SK	n/a	n/a	GGB774
D28995-1	GB13662.D	1	10/31/11	SK	n/a	n/a	GGB774

The QC reported here applies to the following samples:

Method: SW846 8015B

D28995-1

CAS No.	Compound	D28995-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	142	159	112	158	111	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D28995-1	Limits
120-82-1	1,2,4-Trichlorobenzene	96%	97%	85%	60-140%

7.3.1
7

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\103111\GB13662.D\FID1A.CH Vial: 5
 Signal #2 : Y:\1\DATA\103111\GB13662.D\FID2B.CH
 Acq On : 31 Oct 2011 12:47 pm Operator: StephK
 Sample : D28995-1, 50X Inst : GC/MS Ins
 Misc : GC2365,GGB774,5.002,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Oct 31 13:15:12 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Oct 31 13:14:57 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.44	2944420	84.860 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.44	21084725	104.844 %	
Target Compounds				
1) H TVH-Gasoline	7.33	5559348	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.76	183644	0.395	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	0.00	0	N.D.	ug/L d
9) T o-Xylene	0.00	0	N.D.	ug/L d
11) T Naphthalene	14.63	702517	3.256	ug/L

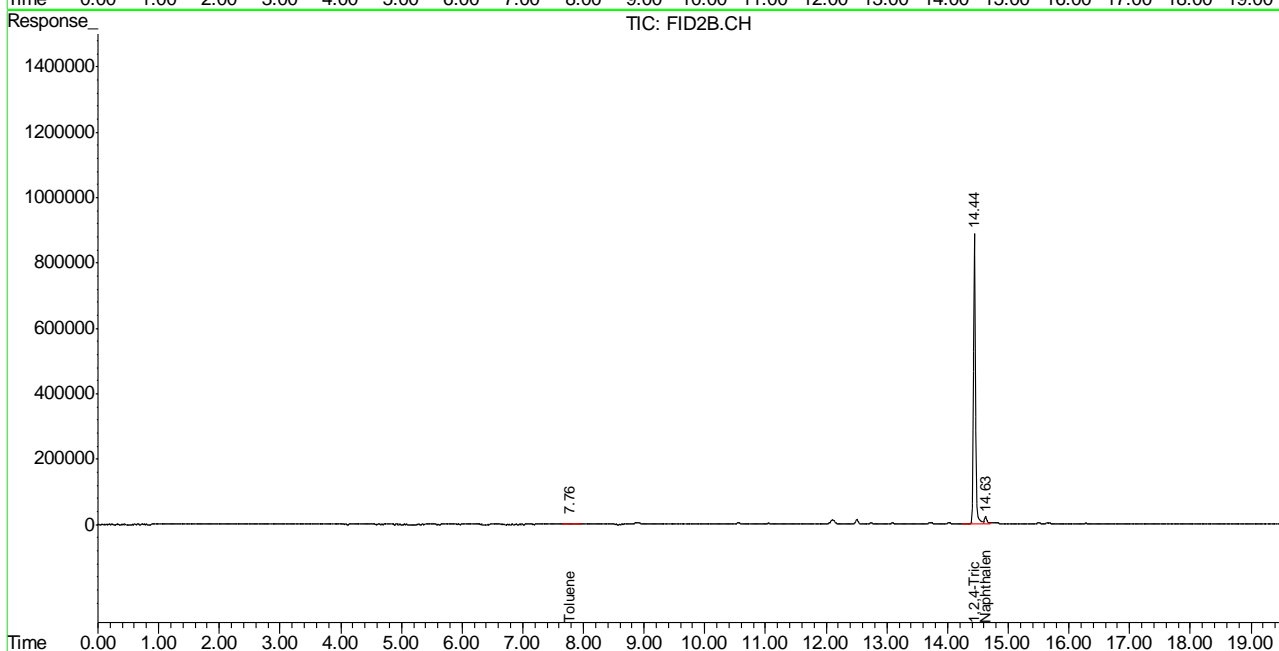
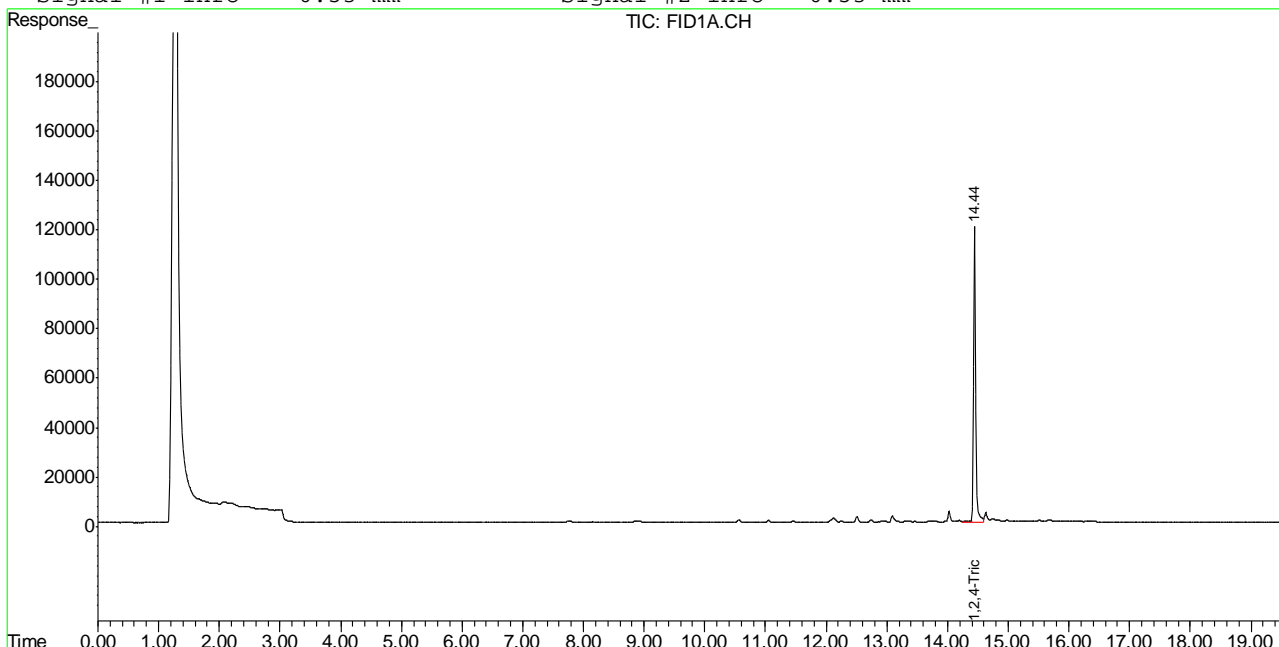
8.1.1
 8

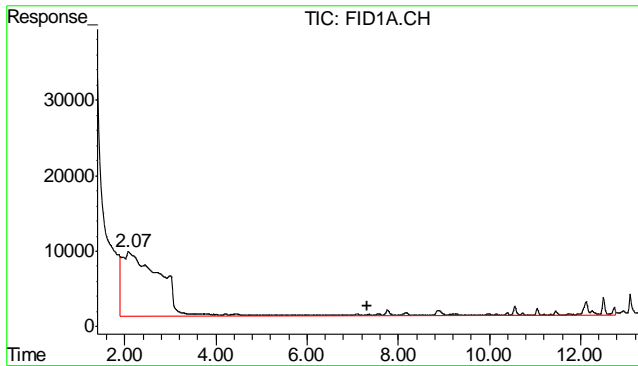
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\103111\GB13662.D\FID1A.CH Vial: 5
 Signal #2 : Y:\1\DATA\103111\GB13662.D\FID2B.CH
 Acq On : 31 Oct 2011 12:47 pm Operator: StephK
 Sample : D28995-1, 50X Inst : GC/MS Ins
 Misc : GC2365,GGB774,5.002,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Oct 31 13:15 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Oct 31 13:14:57 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





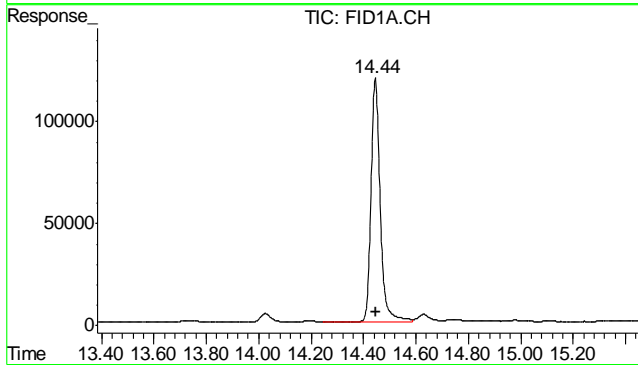
#1 TVH-Gasoline

R.T.: 7.330 min

Delta R.T.: 0.000 min

Response: 5559348

Conc: N.D.



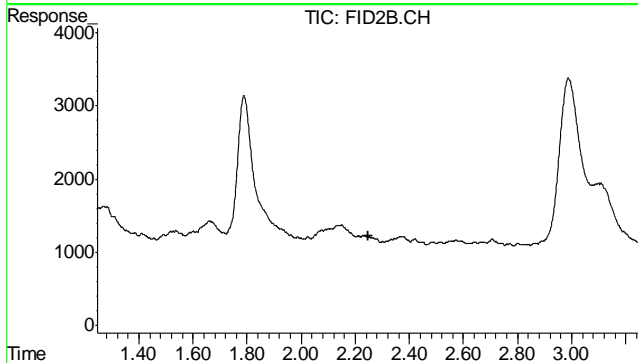
#2 1,2,4-Trichlorobenzene

R.T.: 14.445 min

Delta R.T.: -0.004 min

Response: 2944420

Conc: 84.86 % m



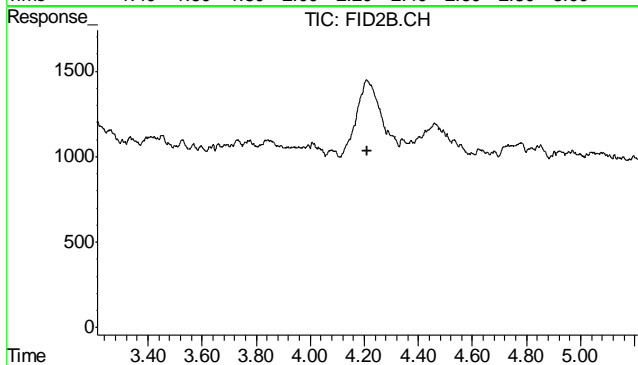
#4 Methyl-t-butyl-ether

R.T.: 0.000 min

Exp R.T. : 2.246 min

Response: 0

Conc: N.D.



#5 Benzene

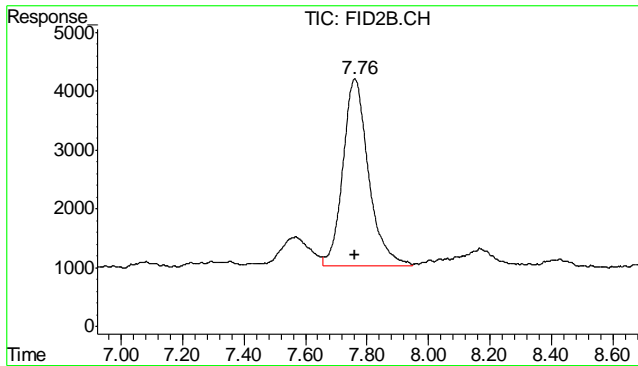
R.T.: 0.000 min

Exp R.T. : 4.212 min

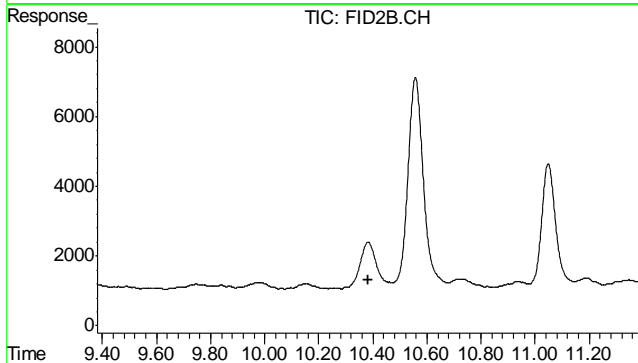
Response: 0

Conc: N.D.

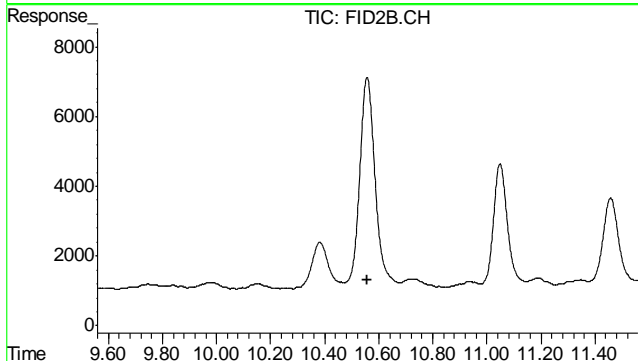
8.1.1
8



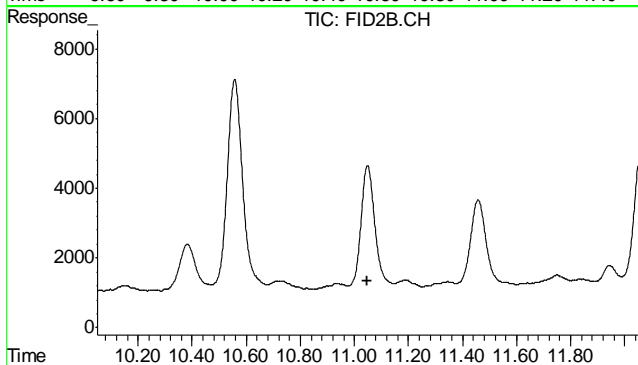
#6 Toluene
 R.T.: 7.761 min
 Delta R.T.: -0.001 min
 Response: 183644
 Conc: 0.40 ug/L



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T. : 10.382 min
 Response: 0
 Conc: N.D.

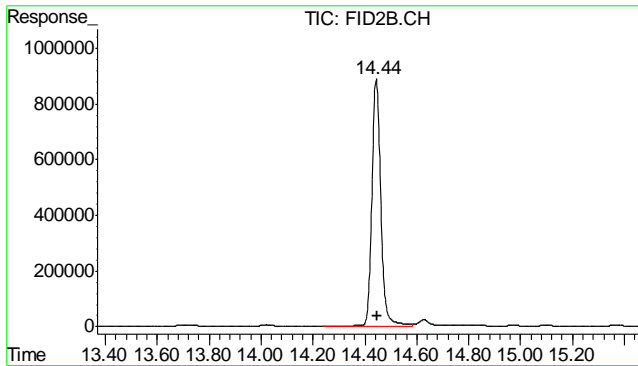


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.559 min
 Response: 0
 Conc: N.D.



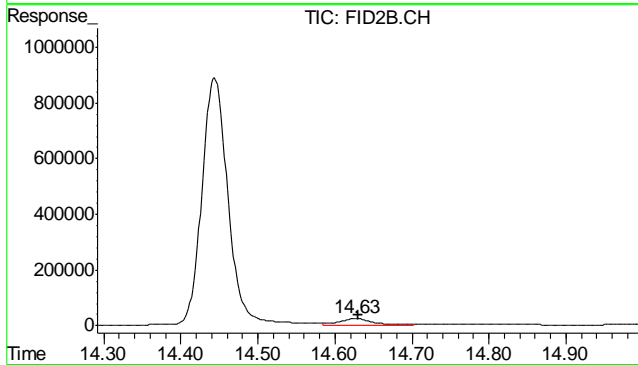
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T. : 11.049 min
 Response: 0
 Conc: N.D.

8.1.1
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.444 min
Delta R.T.: -0.003 min
Response: 21084725
Conc: 104.84 %



#11 Naphthalene

R.T.: 14.627 min
Delta R.T.: -0.003 min
Response: 702517
Conc: 3.26 ug/L

8.1.1

8

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\103111\GB13660.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\103111\GB13660.D\FID2B.CH
 Acq On : 31 Oct 2011 11:36 am Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2365,GGB774,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Oct 31 11:57:44 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Oct 31 11:32:53 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB4.M

Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.44	2971189	85.631 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.44	21383565	106.330 %	
Target Compounds				
1) H TVH-Gasoline	7.33	5637549	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.76	182712	0.393	ug/L
7) T Ethylbenzene	0.00	0	N.D.	ug/L d
8) T m,p-Xylene	0.00	0	N.D.	ug/L d
9) T o-Xylene	0.00	0	N.D.	ug/L d
11) T Naphthalene	14.62	251170	1.331	ug/L

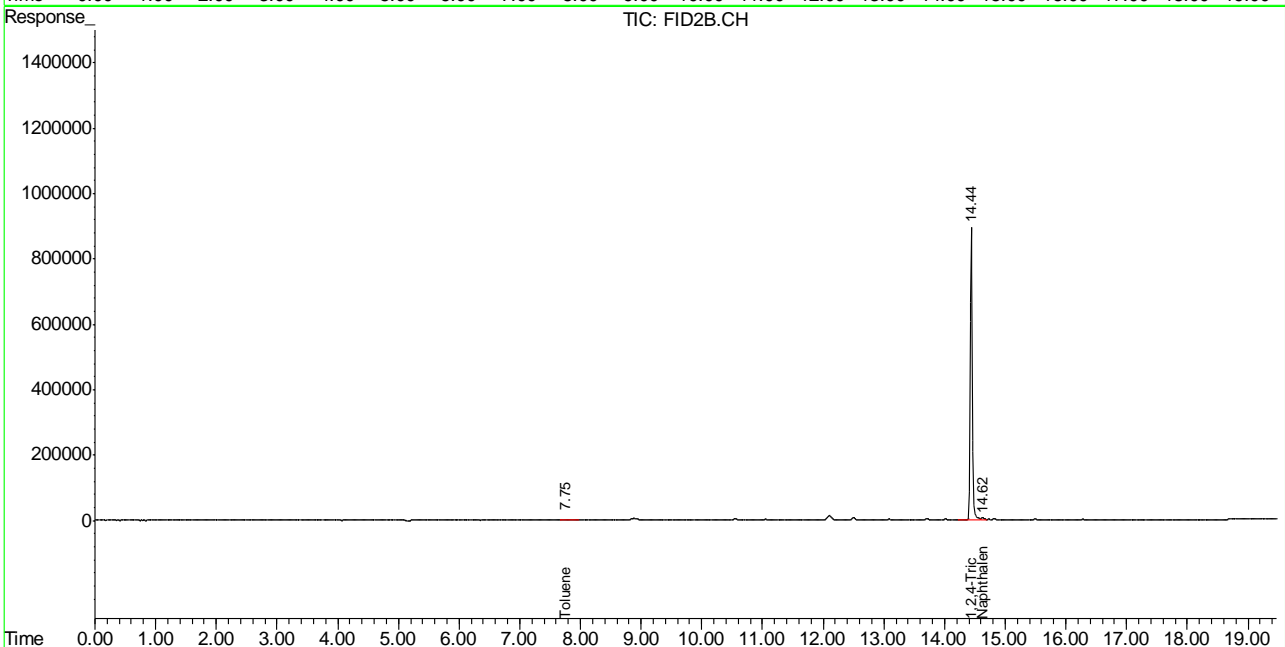
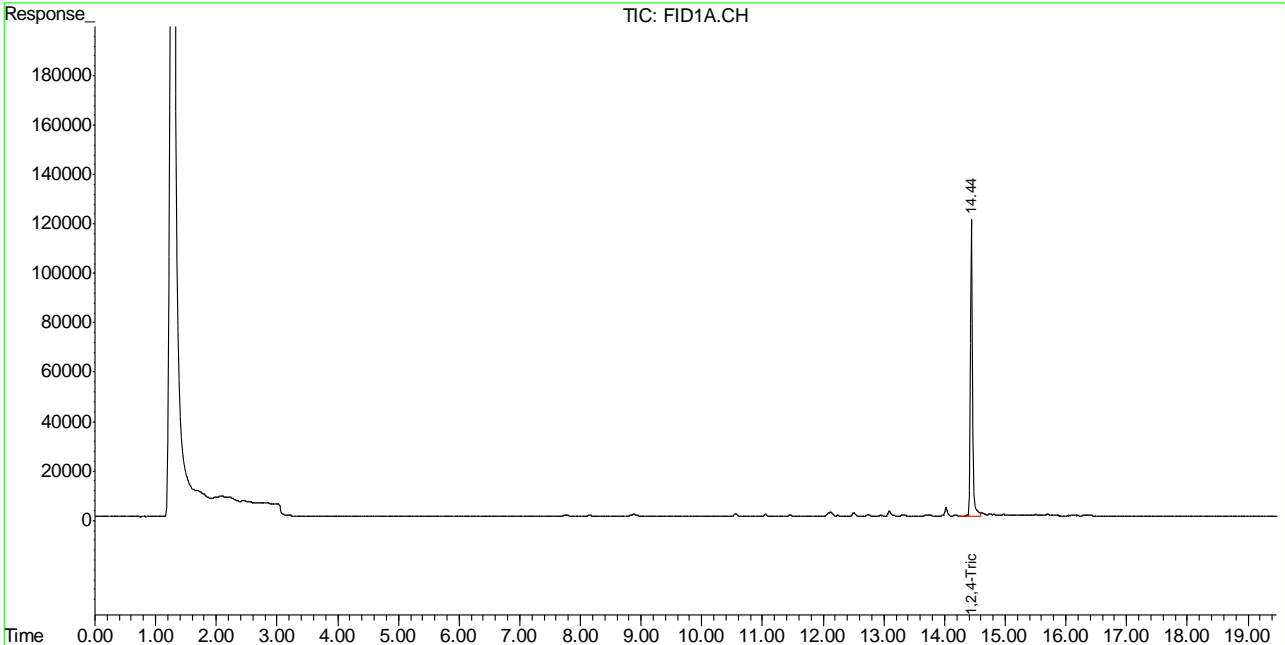
8.2.1
8

Quantitation Report (QT Reviewed)

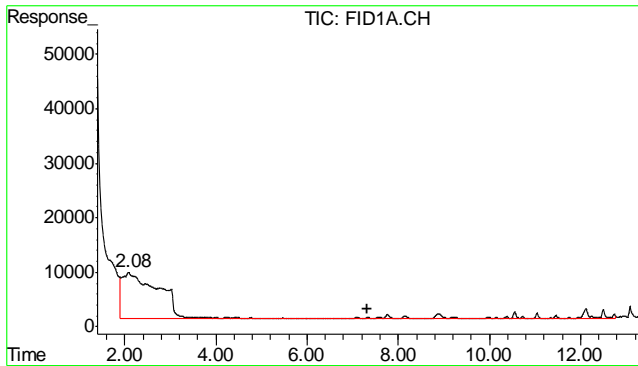
Signal #1 : Y:\1\DATA\103111\GB13660.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\103111\GB13660.D\FID2B.CH
 Acq On : 31 Oct 2011 11:36 am Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2365,GGB774,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Oct 31 11:57 2011 Quant Results File: TB740GB740SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB740GB740SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Oct 31 11:32:53 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

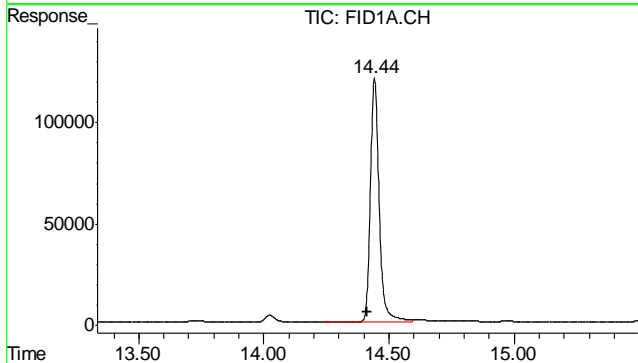
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm



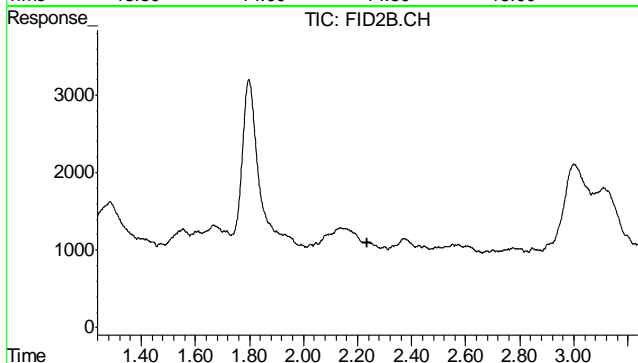
8.2.1
 8



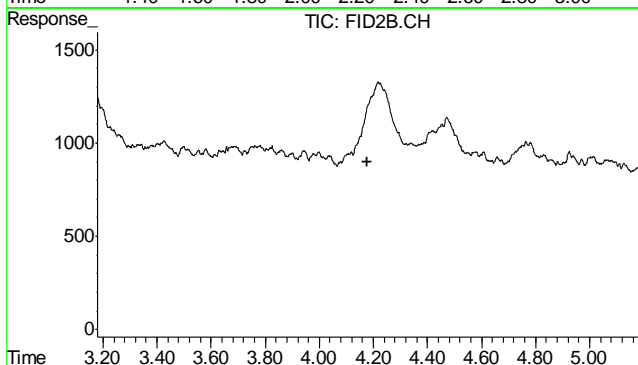
#1 TVH-Gasoline
 R.T.: 7.330 min
 Delta R.T.: 0.000 min
 Response: 5637549
 Conc: N.D.



#2 1,2,4-Trichlorobenzene
 R.T.: 14.442 min
 Delta R.T.: 0.028 min
 Response: 2971189
 Conc: 85.63 % m

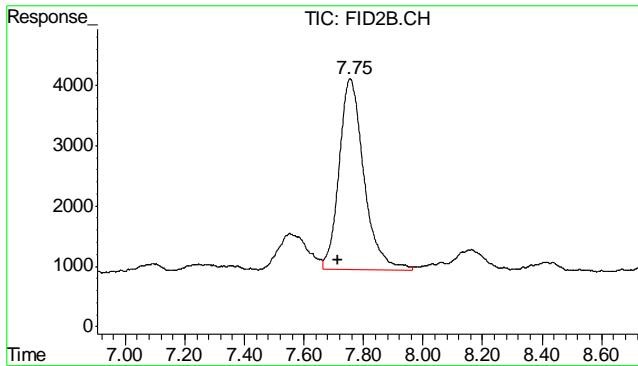


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T. : 2.237 min
 Response: 0
 Conc: N.D.

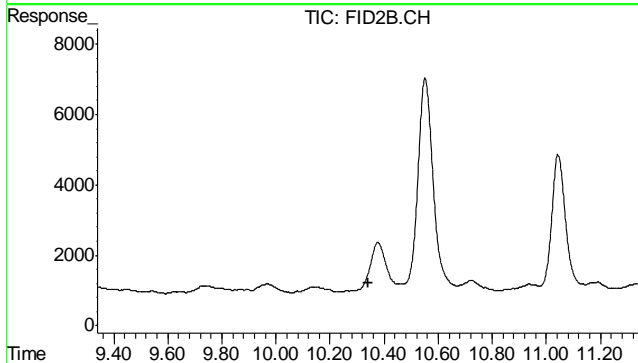


#5 Benzene
 R.T.: 0.000 min
 Exp R.T. : 4.179 min
 Response: 0
 Conc: N.D.

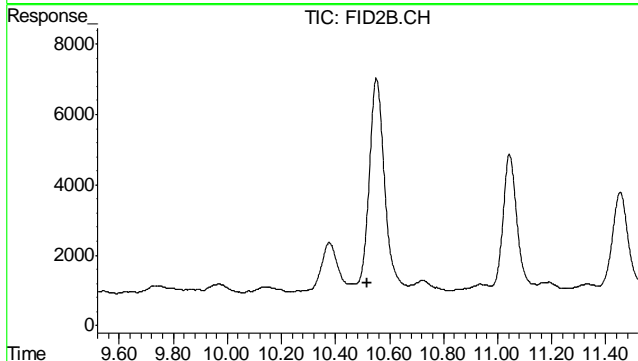
8.2.1
 8



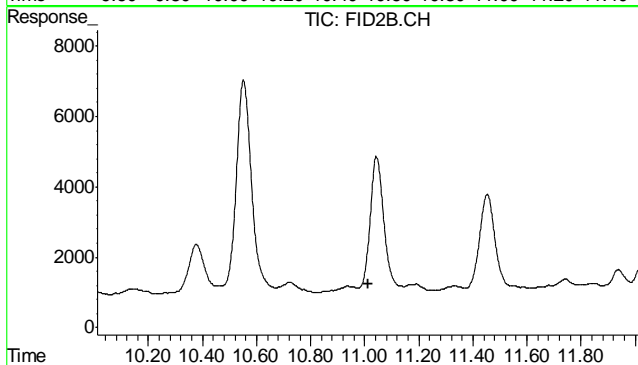
#6 Toluene
 R.T.: 7.755 min
 Delta R.T.: 0.040 min
 Response: 182712
 Conc: 0.39 ug/L



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T. : 10.340 min
 Response: 0
 Conc: N.D.

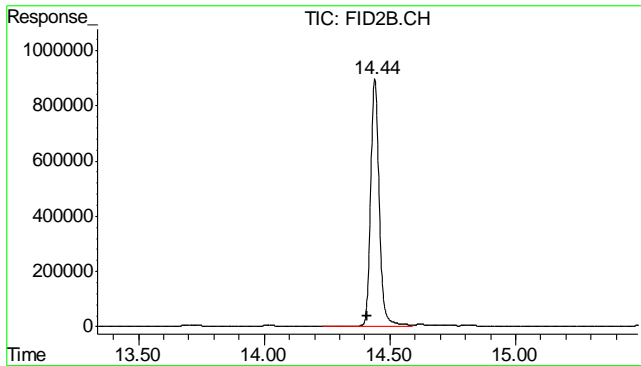


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T. : 10.518 min
 Response: 0
 Conc: N.D.



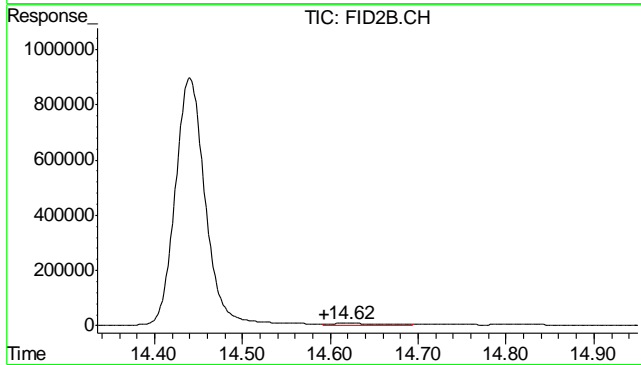
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T. : 11.011 min
 Response: 0
 Conc: N.D.

8.2.1
8



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.440 min
 Delta R.T.: 0.029 min
 Response: 21383565
 Conc: 106.33 %



#11 Naphthalene

R.T.: 14.622 min
 Delta R.T.: 0.028 min
 Response: 251170
 Conc: 1.33 ug/L

8.2.1
 8

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4765-MB	FD11207.D	1	11/01/11	TR	11/01/11	OP4765	GFD559

The QC reported here applies to the following samples:

Method: SW846-8015B

D28995-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	120% 61-142%

Blank Spike Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4765-BS	FD11208.D	1	11/01/11	TR	11/01/11	OP4765	GFD559

The QC reported here applies to the following samples:

Method: SW846-8015B

D28995-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	726	109	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	107%	61-142%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D28995
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM PCU 297-12A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4765-MS	FD11209.D	1	11/01/11	TR	11/01/11	OP4765	GFD559
OP4765-MSD	FD11210.D	1	11/01/11	TR	11/01/11	OP4765	GFD559
D29012-2	FD11211.D	1	11/01/11	TR	11/01/11	OP4765	GFD559

The QC reported here applies to the following samples:

Method: SW846-8015B

D28995-1

CAS No.	Compound	D29012-2 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	738	715	97	826	112	14	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D29012-2	Limits
84-15-1	o-Terphenyl	102%	111%	110%	61-142%

9.3.1

9

GC Semi-volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
11/02/11 10:02

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD110111\FD11220.D Vial: 16
Acq On : 11-1-2011 07:09:27 PM Operator: TEDR
Sample : D28995-1 Inst : FID5
Misc : OP4765,GFD559,30.12,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Nov 02 07:16:48 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Oct 28 07:04:31 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.70	46293395	1094.436 mg/L m

Target Compounds

10.1.1
10

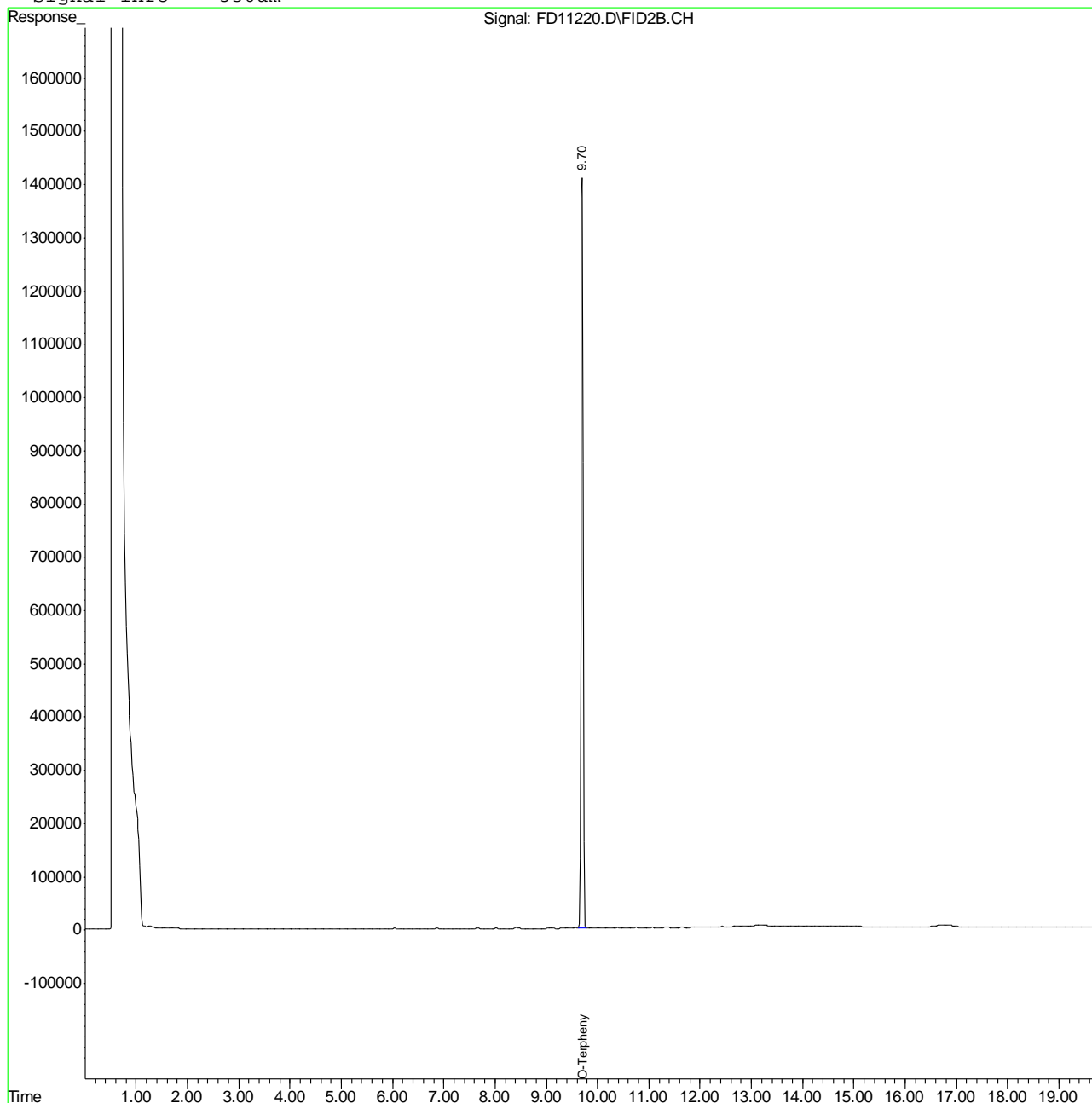
(f)=RT Delta > 1/2 Window (m)=manual int.
FD11220.D GFD530.M Wed Nov 02 07:25:55 2011 GC

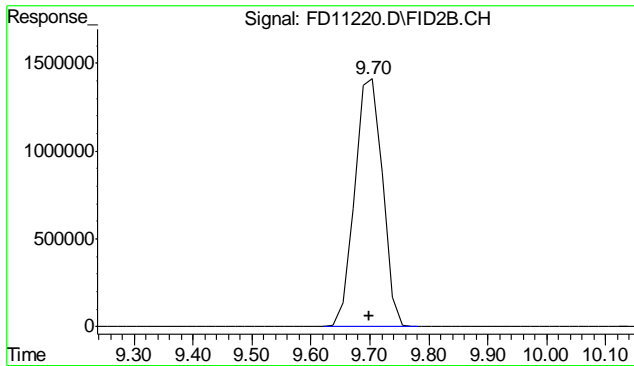
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD110111\FD11220.D Vial: 16
Acq On : 11-1-2011 07:09:27 PM Operator: TEDR
Sample : D28995-1 Inst : FID5
Misc : OP4765,GFD559,30.12,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Nov 2 7:17 2011 Quant Results File: GFD530.RES

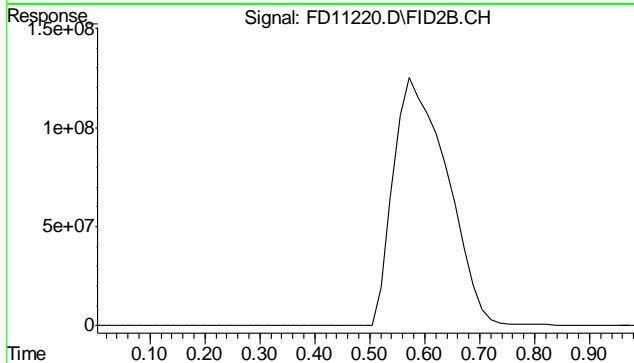
Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Oct 28 07:04:31 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl
R.T.: 9.697 min
Delta R.T.: -0.003 min
Response: 46293395
Conc: 1094.44 mg/L m



#9 5a-Androstane
R.T.: 0.000 min
Exp R.T. : 0.000 min
Response: 0
Conc: N.D.

10.1.1
10

Manual Integrations
APPROVED
 (compounds with "m" flag)
Judy Melson
11/02/11 10:02

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD110111\FD11207.D Vial: 3
 Acq On : 11-1-2011 01:27:18 PM Operator: TEDR
 Sample : OP4765-MB Inst : FID5
 Misc : OP4765,GFD559,30.00,,,2,1 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Nov 01 14:20:41 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Fri Oct 28 07:04:31 2011
 Response via : Initial Calibration
 DataAcq Meth : JH080911.M

Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.70	52174983	1202.003 mg/L m

Target Compounds

10.2.1
10

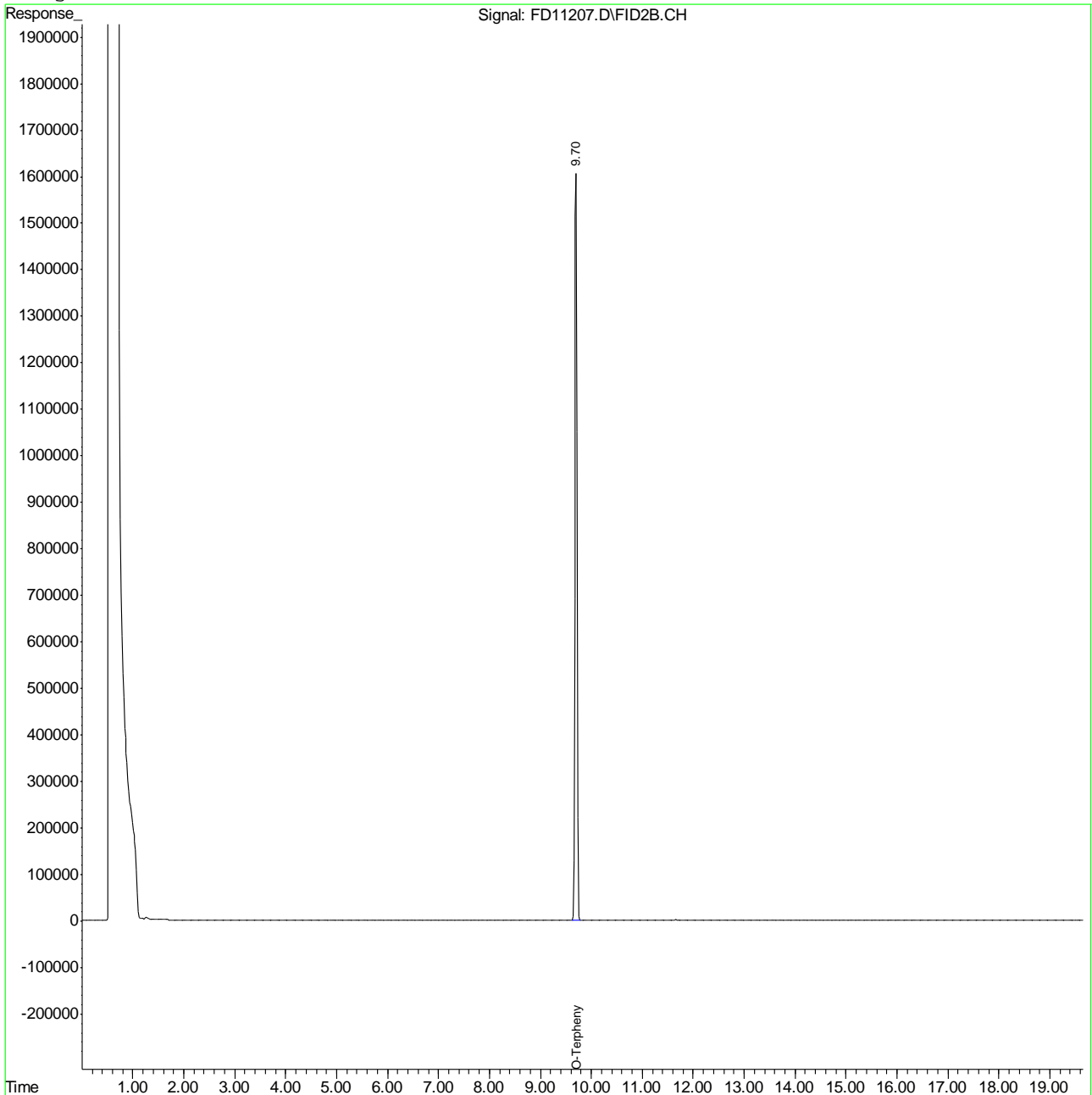
 (f)=RT Delta > 1/2 Window (m)=manual int.
 FD11207.D GFD530.M Wed Nov 02 07:25:42 2011 GC

Quantitation Report (QT Reviewed)

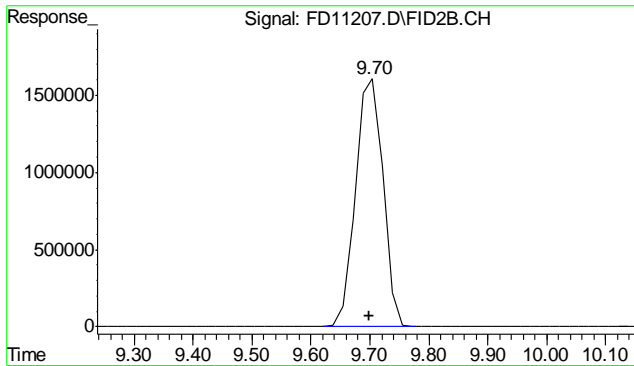
Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD110111\FD11207.D Vial: 3
Acq On : 11-1-2011 01:27:18 PM Operator: TEDR
Sample : OP4765-MB Inst : FID5
Misc : OP4765,GFD559,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Nov 1 14:21 2011 Quant Results File: GFD530.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD530.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Oct 28 07:04:31 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

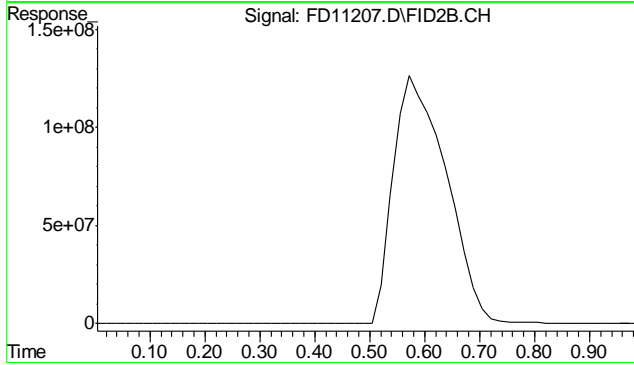
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um



10.2.1
10



#1 O-Terphenyl
R.T.: 9.699 min
Delta R.T.: -0.001 min
Response: 52174983
Conc: 1202.00 mg/L m



#9 5a-Androstane
R.T.: 0.000 min
Exp R.T. : 0.000 min
Response: 0
Conc: N.D.

10.2.1
10